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FORESTRY ON INDIAN LANDS IN CANADA. 1976.

Forestry on Indian Lands in Canada

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Foreword

This publication deals with past and present utilization of forest resources on Indian reserves in Canada. It describes how these forests are protected and managed in conjunction with the Indian bands, and outlines the roles of various Federal agencies and of the Indians themselves in promoting these objectives.

The desire and need to publish such a document crystallized in 1974 while many of the people connected with this work were still in the Public Service and before the records for the past 30 years were destroyed or became difficult to review.

Although the forests are only one of many natural resources on the reserves, they have played an important role in Indian life for many centuries. The basic conditions and records exist for the native peoples and the government administrators to cooperate in the wise use of this important renewable resource to the advantage of Indians residing in the forested areas.

Acknowledgements

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Introduction

The forest has always been a valuable resource of Indian lands, and it has had a profound effect upon the Indian culture and way of life. At one time it provided everything—food, fuel, clothing, shelter, tools and water transportation—for the Indians who lived in it. The more extensive use of forest products began with the landing of the first European settlers, and eventually Indian bands were to profit from this demand. One of the first records of revenue from lumber was made in 1864—from a sawmill on a reserve in Southern Ontario.

The Indian lands of Canada cover some 6 million acres, divided among 2,212 reserves in nine provinces*. The Indian Act of 1880 defines a reserve as “a tract of land the legal title to which is vested in Her Majesty and has been set aside by Her Majesty for the use and benefit of a band of Indians”. This means, in practice, that each Indian band decides on the uses that may be made of the natural resources of the reserve, including the timber.

The terms under which they dispose of the timber have been governed by the Indian Timber Regulations since 1893. In the past, Indian bands usually surrendered their timber rights to the Crown, and the Department of Indian Affairs sold these to the highest bidder on their behalf. Today, Indians are more involved in the forest operations on

reserves. The harvesting, sale and disposal of timber are still covered by the Timber Regulations, but these are revised from time to time to meet changing technology and needs, most recently in 1954.

The Indian Affairs Branch administers the regulations governing timber permits, timber licences, renewals, ground rent, security deposits, scaling, fire protection, records, conservation, seizures and penalties. In general, permits are issued where the resident Indians do their own harvesting and marketing. Licences are confined to the sale of larger volumes of timber now found mainly in British Columbia, but also on unoccupied lands in other provinces, where usually a company purchases the timber after public auction.

*Newfoundland, the Yukon and Northwest Territories have no Indian reserves as defined by the Indian Act.



The Forest Resource

The forest lands on Indian reserves are a considerable asset. They cover 2.7 million acres, or 44% of the total area of the reserves. Alberta's reserves occupy the largest total acreage, but are second to Ontario in forest lands. British Columbia has the most reserves, but is third in forest-land acreage.

The annual timber harvest from Indian reserves averages about 332,000 cunits (1 cunit = 100 cubic feet of solid wood). This is three times the yield obtained from all other federal lands, which comprise national parks, the Yukon and Northwest Territories, and the Department of National Defence and Department of the Environment properties. Softwood species provide over 75% of the harvest from reserves.

The timber harvest is currently worth some \$8 million a year to the Indian bands, including the wood they use themselves for fuel and building material, but not counting their revenues from related industries, such as manufacturing wood products, collecting maple syrup and growing Christmas trees. The forest also provides an environment suitable for recreation, such as hunting and vacationing. This can benefit the Indian people both commercially and in their own enjoyment.

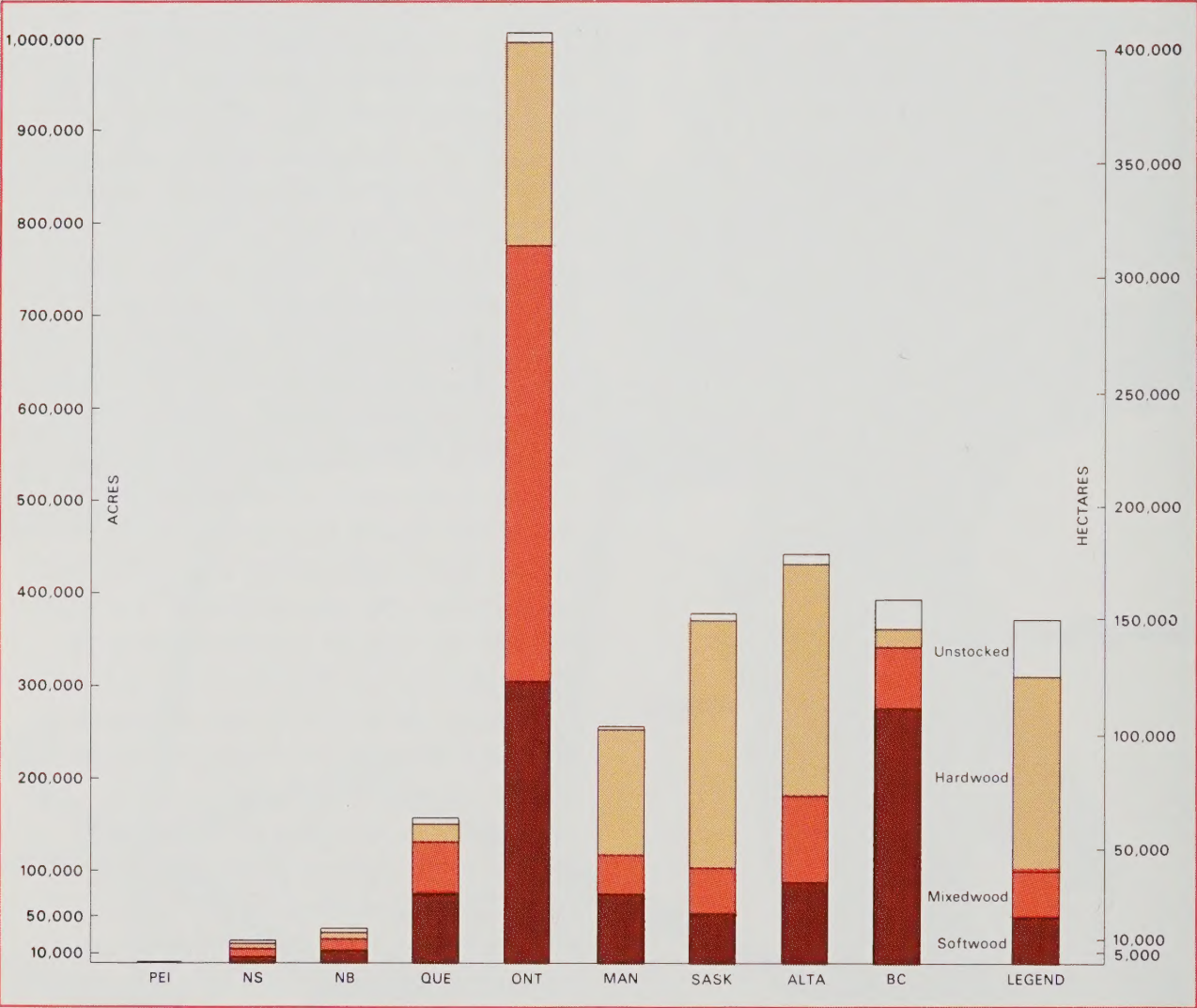
Before 1949, professional forestry advice was seldom made available to Indian bands. The band councils would allow logging companies to cut timber at an agreed price per cord or per 1,000 board feet. The Indian Affairs Branch, which recorded such transactions for timber, mineral and oil rights, issued the licences and acted as trustee for the revenues which went into band funds. Some licences were

renewed repeatedly over a long period without any change in price.

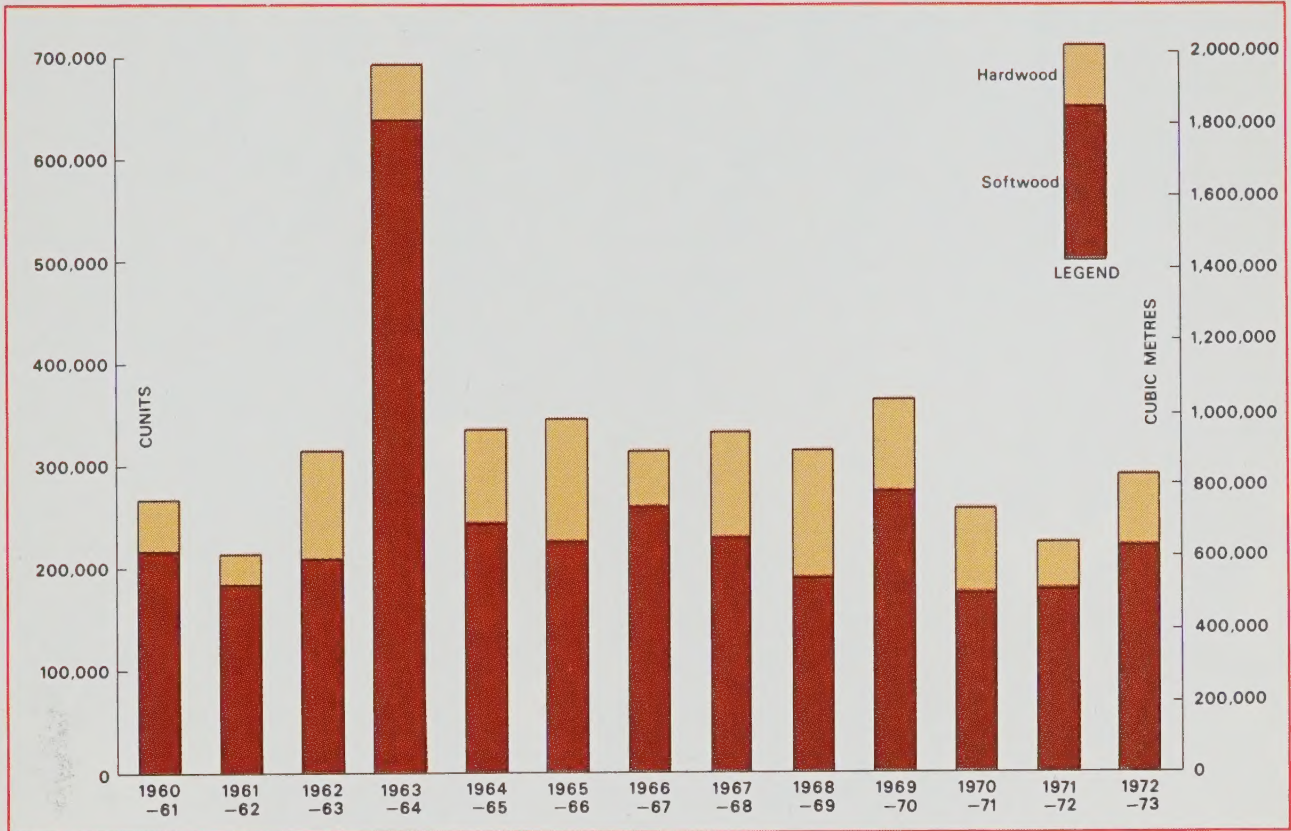
Since 1959, the number and volume of products harvested from forest lands on Indian reserves have been reported annually to the Canadian Forestry Service*, but for many years under an informal arrangement. More recently, to assist in the orderly administration of forest resources, it has become a statutory requirement that all wood cut on federal lands must be recorded

on standard forms, and the records are published annually.

As these records show, the annual timber harvest from reserves has not increased in recent years, nor is it likely to increase substantially in the foreseeable future. However, opportunities do exist for increasing both individual earnings and band revenues by greater participation in the cutting and processing of timber, and through recreational use.



Forest areas of Indian reserves in Canada.



Timber harvest from Indian reserves in Canada 1960-73.

Since the decisions on development of forest resources rest with the members of each band, they need to know the extent and condition of the timber and its potential use. That is the main purpose of the surveys, management proposals, financial aid and technical advice available to reserve Indians, and reviewed in this booklet.

*This organization has undergone many changes in its title over the years, but to avoid confusion it will be known by its present title, the Canadian Forestry Service, throughout this publication.



The Past

A glance at the past helps to put the more recent surveying and management efforts on Indian forest lands in perspective. The early European settlers, arriving in the east during the 17th century and in the west during the 18th, made relatively modest demands on the Canadian forest, mainly for ships' masts and spars, and then their settlements and forts. The heavier exploitation of timber came late in the 18th century with the extension of the lumber trade up the river valleys of New England and the Saint John River. It spread gradually westward during the 19th century, aided ultimately by the Canadian Pacific Railway in reaching the West Coast.

Some heavy cutting of prime timber seriously depleted the accessible forest of its most valuable growing stock, and the forest on Indian reserves fared similarly but probably at a slower rate. By no means all of the cutting has been harmful, of course, since it is sound forestry and commercial practice to harvest mature trees for sale provided that the stands are regenerated.

Since Indian people did not usually develop large timber-cutting operations, their impact was generally not severe, except for a tendency to lower the quality of a stand by "high grading" (harvesting the best timber first) — a common practice at one time, and by no means confined to Indians.

More serious problems arose when, as was usually the case, Indian bands sold the standing timber under licence to lumber companies. The volume, and therefore the value, of the timber removed was assessed from the sworn



Boom of logs for conversion at sawmill on Big Trout Lake Reserve, Ontario.



Portable sawmill, Peter Pond Reserve, Saskatchewan.

statements of the jobbers who had acquired the cutting rights. The system was easily abused; Indian bands could be underpaid, at the same time losing their timber at a faster rate than records showed.

Further depreciation of the growing stock resulted from an official obsession with agriculture. For almost 100 years, from the middle of the last century, the annual reports of Indian agents gave little more than bare statistics of the timber harvest, but described in detail even the smallest achievements in their efforts to persuade Indians to turn the forest into fields. The Indian people generally showed little inclination to be tied to the routine of farm life, and, in any case, much of the land cleared was unsuited to growing farm crops.

An epitaph to one such attempt appears in the Forest Survey Report on the Maniwaki Reserve, Quebec, dated 1962: "Many Indians cleared bushland and attempted to become farmers, but today there are very few active farmers on the reserve, and the cleared land is gradually reverting to forest and brushland".

The question, therefore, is not whether to cut timber on Indian lands, but how it should be done. This is underlined by the fact that forestry and the woods industry present one of the best opportunities for the economic development of Indian people, particularly in the northern areas, and especially in British Columbia. Much of the native population lives in forested areas within economic distance of markets for forest products such as

pulpwood, sawlogs and manufactured goods.

Development of forestry programs for native people, however, is difficult because the reserves often consist of a large number of small, widely scattered tracts of land, on which the production potential has been reduced by overcutting and high grading in the past.

For these reasons—the need to know the extent of the forest resource and how it could be rationally exploited—organized surveys came into being.



The Forest Surveys

1948-1952

The first step was taken in 1948, when the Indian Affairs Branch asked the Canadian Forestry Service to find out what needed to be done. The forester assigned to that task set out on a fast reconnaissance in Ontario, later extended to the Prairies. In the course of two summers, often travelling into remote areas by Indian Affairs launch, canoe or aircraft, guided by inadequate maps, and talking to chiefs and Indian agents, he and an assistant completed an initial assessment of reserves and selected those that deserved special attention.

The forester then recommended that the Canadian Forestry Service carry out detailed surveys and draw up forest management plans for the reserves, and that the Indian Affairs Branch recruit a staff of foresters to provide the help needed in carrying out the plans.

By 1949, the Canadian Forestry Service had embarked on the first concerted attempt to inventory the forest resource and the factors related to timber production and harvesting, and to assess the opportunities that Indian people might have for improving their standard of living through forestry.

Rough mapping of some reserve forests had been done in the 1930's, largely from the ground, but the information was sketchy. However, a systematic program of aerial photography had been in progress since 1945, and the survey was to be built on that foundation.

The general approach was to interpret the data from the air photographs, revise the maps, and then check their accuracy with ground surveys of the more promising reserves. The photographs were on a scale of one inch to four miles, appropriate for depicting the detail required. Interpretation of these photographs, with the aid of stereoscopes, consisted of defining the reserve boundaries, classifying the stands of trees according to species, height and density, and identifying other important features such as non-forest land, streams and roads.

This information was then transferred to preliminary maps, which the survey crews were to check. As well as making a general reconnaissance, the crews laid out one-tenth acre

sample plots of the main forest cover types, on which they took detailed measurements. The results were compiled and tabulated, and the maps were revised to produce reliable forest cover maps at a scale of about 1:15,000.

This first series of surveys, 1948-52, covered about 60 of the larger, well-forested reserves, mostly in Ontario. From the data collected, these reserves were provided with simple management plans which gave a description of the forest and indicated the timber that might be cut first, the amount of annual cutting, if any, that each reserve could sustain continuously, and other uses for the forest resource besides the timber harvest.



Band members loading canoes for survey party, northern Ontario.



Forest inventory, Saugeen Reserve, Ontario.

1960-1968

The second series of surveys in the 1960's, including some resurveys, resulted in more detailed management plans for selected reserves, as well as basic data for hundreds more. The greater part of the reserves east of the Rocky Mountains was covered during this period.

The techniques employed were much the same as those for the earlier series. Now, however, more emphasis was placed on opportunities for the Indian people to improve their lot in the immediate future, rather than as a distant objective.

British Columbia

A different procedure was adopted for the reserves in British Columbia. The principal source of information was an inventory of almost half of the reserves made in 1960-61 by a consultant firm for the Indian Affairs Branch. The Forest Management Institute of the Canadian Forestry Service then planned and organized a review and updating of the inventory with the help of the B.C. regional staff of Indian Affairs, who did the field work. The Institute prepared and published the data.



The Reports

A mass of aerial photographs, maps, data, observations and recommendations resulted from the air and ground surveys of Indian forest lands. The Forest Management Institute compiled and organized this material into 34 reports, including 27 volumes of "Forest Survey Reports", six volumes of "Air Photo Reconnaissance Records", eight volumes and 13 district supplements of "Major Land-Use Areas of Indian Reserves in British Columbia", and a brief summary entitled "Land Use on Indian Reserves in Canada". The titles of the reports are listed in the Appendix and descriptions of the reports follow.

Forest Survey Reports

These reports deal essentially with the merchantable timber volume and forest management plans for each of the 33 major reserves surveyed, but also consider them in the broader perspective of the life and conditions on these reserves.

A typical report describes the reserve area in terms of its band, topography, forest protection, accessibility and economy. It catalogs the tree species and their distribution. It discusses the survey methods, including the use of photography and mapping, and the ground checks made of sample plots of representative tree species. It also classifies the forest and other lands on the reserve according to their productivity.

The timber data cover the merchantable volume, logging operations, reproduction and advanced growth of

young trees, tree growth and condition, and the classes of forest soils. There are also some references to wildlife in relation to forestry.

The forest management plans offer a guide to Indian bands for developing forest resources through planned cutting programs, forest land improvement, training courses and reforestation, and also for alternative land uses such as agriculture, fish and wildlife production, and recreation.

An important feature of these surveys, as reflected in the reports, is the increasing attention paid to multiple use of forest lands as a supplement to wood production. The first example of this applied to the Christian Island Reserve in Georgian Bay, Ontario, where the survey party inspected beaches to find suitable places for loading timber onto barges, and discovered at the same time that these sites could have considerable value if subdivided for vacation cottages.

Another principle that came into use is known as the "geographic pivot". This is a line drawn on the map to represent the axis of key areas and activities of a province. The geographic pivot's position in relation to a reserve will then indicate the feasibility of developing the reserve's forest resources taking into consideration the pattern of non-Indian communities, the location of industry and the network of ground transportation in the province.

The report on the Peter Pond Lake Reserve, Saskatchewan, shows the limits placed on forest development by the geographic pivot. The isolated location of the reserve creates a

critical obstacle to full development because all forest products must be used within the local community. The report suggests, therefore, that forest management should be primarily concerned with producing good quality forest products, developing an economical transportation system and acquiring additional markets.

Recommendations for the forest on the Doncaster Reserve, Quebec, were modified for a different reason. The bands in that area had a strong preference for maintaining and improving the recreational and aesthetic environment for their members, and preventing the reserve from being overrun by tourists and recreationists. The report's proposals make due allowance for their wishes.

The report on the English River Reserve in Ontario draws attention to a marketing problem plaguing many reserves, the risk of jeopardizing the future by exploiting the best tree species, and being left with only the poorer ones. Suitable forest management, according to this report, means that every effort should be made to market jack pine and poplar, with high quality spruce acting as a "bait or bonus" for the buyer. If the supply of spruce was depleted, the other species might become uneconomic to operate and the band could experience many years without forest employment.

Another Ontario reserve, at Cape Croker, illustrates the possibility of using existing talents within the band to develop wood products. The report notes that some band members had been making lacrosse sticks and had acquired experience in bending and

shaping wood. It suggests that they might turn this skill in woodworking to further advantage by setting up a cottage industry for building canoes and selling them, as was being done on other reserves.

These few examples indicate that reports, far from presenting a rigid set of rules, are intended to fit the conditions found on each reserve.

Air Photo Reconnaissance Records

These records provide data on land use, forest cover and potential utilization of timber derived largely from interpretation of aerial photographs taken before 1970. The series includes 38 reserves in Nova Scotia, 4 in Prince Edward Island, 22 in New Brunswick, 39 in Quebec (plus 13 Indian settlements), 172 in Ontario (plus 6 Indian settlements), 102 in Manitoba, 123 in Saskatchewan and 92 in Alberta, for a total of 592 reserves and 19 settlements.

The data follow a similar pattern to those in the Forest Survey Reports, but are presented in a plain statistical format on air reconnaissance record sheets. In addition, the introductory section to each province's reserves contains general comments and explanations.

The major area classifications for the eight provinces include agricultural land, productive forest land, non-productive land (such as swamps, rock, settlements and roads) and water. The productive forest land is divided up according to the major cover types and the maturity of stands.

Details are also given of the location of each reserve, the means of transportation, the presence of settlements, and the aerial photographs used. Remarks at the foot of each record sheet sum up the impressions gained about the reserve's forest resource.

A tentative forest development rating is given to each reserve to indicate

Air Photo Reconnaissance

Area Name FORT ALEXANDER I.R. No. 3
Province . . . Manitoba Lat. . . 50°35' Long. . . 96°15'
Topo. Sheet 62 I Area in Acres . 22,093 . Sq. Mi. . 34.52

Area Estimate in Per Cent

Forest Land	Mature	Immature	Young
Swd.		. . 14	
Mwd.			
Hwd.	. . 25		. . 15
Agricultural Land	. . . 7		
Waste	. . 25		
Water	. . . 8		
Cut	. . . 6		
Accessibility - Roads	Yes	Railroad	Yes
Water	Yes		
Settlement (describe)	Cabins and small farms along both shores of the Winnipeg River.		

Photography - Scale .1" = 1,320' Year . . .1967 Quality . . Good
Scale Year Quality
Scale Year Quality

Remarks There is a pulp mill just outside the reserve at Pine Falls.
There are 2 or 3 fair sized softwood stands but the tree size is generally not very big. Waste is treed muskeg. Cut areas are partial cuts leaving the smallest trees behind. A forest management program should be useful on this reserve.

immediate possibilities for forestry programs which might return appreciable benefits to Indian bands.

British Columbia

Although the province's 191 Indian bands have by far the largest number of reserves in Canada, only 12% of these reserves exceed one square mile in size, and others cover as little as five acres. Some of the larger ones in the interior have poor timber, mixed with grazing land. Many of the coastal reserves located on tidewater or the upper reaches of streams, accessible only by water, contain some of the best stands.

The report for these reserves, entitled "Major Land-Use Areas of Indian Reserves in British Columbia", gives the land-use classifications and the size, location and condition of forest resources, including major cover types and maturity classes for each reserve. It does not contain recommendations for development, but the information is used by foresters in the province to select the more promising reserves and investigate their potential for forest management and development. The method of presentation is similar to that of the "Air Photo Reconnaissance Records" for the other eight provinces.

Land-Use Report

Following the completion of the various survey reports, the Forest Management Institute summed up its findings in "Land-Use on Indian Reserves in Canada". This describes the scope and methods of the surveys, and provides a concise, but comprehensive, statistical summary of the major land-use areas of Indian reserves. The data cover the stocked and unstocked forest lands, non-forest lands and total reserve areas by province and for all Canada. Information on the air photography program and the reference material related to it is included.

LAND USE AREA CLASSIFICATION

Reserve Name and No.:	BELLA COOLA NO. 1	Reserve Code No.:	155
Band Name:	Bella Coola	Band Code No.:	2
Agency Name:	Bella Coola	Agency Code No.:	972
District Name:	District Code No.:		
N.T.S. Sheet No.:	93 D/7 e&w	A.I.R.S. Index No.:	112/7B
Total Area:	3347 acres;	5.23	square miles.

Estimated Percentage of Total Area

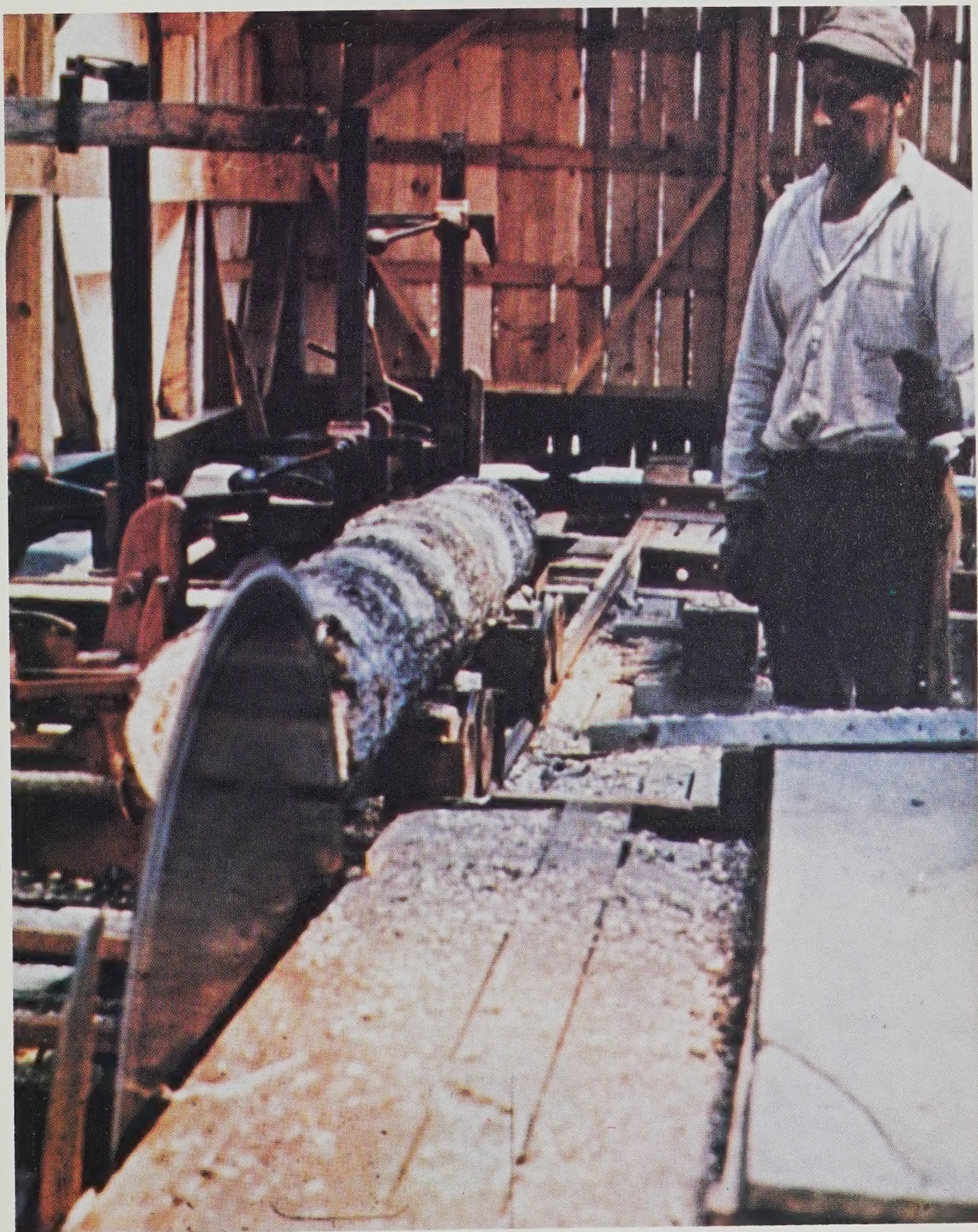
<u>Forest Land</u>	Mature %	Immature %	Young %
Softwood	. 24 .	. 30 .	
Mixedwood			
Hardwood			
Clear Cut			
<u>Agricultural Land (%)</u>	. 5 .		
<u>Other Land (%)</u>	. 37 .		
<u>Water (%)</u>	. 4 .		

Accessibility

Road: yes Railway: Water: yes

Remarks

1. Located on the banks of Bella Coola River, at its outlet into North Bentinck Arm.
2. Johnson Report recommended a new boundary survey of Reserve.
3. Cottonwood on agricultural land and river delta logged 1969-1970.
4. Key industrial site for major forest industry.



Log carriage and circular headsaw in sawmill on reserve in western Canada.



Aspects of Development

Forestry Activity

Most of the reserves in British Columbia, the foothills of Alberta, the aspen parklands of the Prairies, all reserves in the Precambrian Shield and in the Maritimes feature some forestry activity.

Conditions in British Columbia generally differ from those in other parts of Canada. Because the trees grow larger and the terrain is rougher, extraction costs are considerably higher, and it is necessary to invest more money in capital equipment and operations. Most of the reserves are small and the advanced state of mechanization in the industry makes exploitation of timber stands uneconomic without expensive equipment, and thus limits owner-exploitation.

In the rest of Canada, pine, spruce and poplar are found from Nova Scotia to the Peace River District of Northern Alberta. The terrain and weather conditions are generally much the same throughout, and thus there are similarities in equipment and operating techniques. However, while it is possible to exploit smaller properties by hand methods, it is now becoming more and more unprofitable, and an increase in mechanization has forced many small operators out of the industry. The market is also more demanding for sawmill products since minimum quality standards are required for such factors as moisture content in seasoning and grade sampling of lumber.

If an Indian band finds that it cannot afford to cut the timber, it can sell it

and collect the stumpage dues, as is done in the main in British Columbia, where the B.C. Forest Service inspects the cut to ensure that forest management practices are being properly observed.

Silviculture

A great deal of work is required in silviculture to rehabilitate the forest potential of many reserves and make their forestry operations more profitable. This involves mainly reforestation, scarification and chemical control of unwanted vegetation.

The provinces usually supply planting stock free, or at nominal cost, for reforestation, and there has been

excellent cooperation from these authorities. The service is not exclusive to Indian reserves, but it is available to them.

Scarification, usually cheaper than planting, is an alternative. This is basically a method requiring disturbance of the soil, usually in cutover and burned areas, to stimulate regeneration of the forest from natural seed sources.

After the Surveys

The survey reports have given Indian bands the necessary basic information to effectively utilize their forest resources. They and the foresters now have the means to plan either forestry projects on individual reserves or



Tree planting, Whitefish River Reserve, Ontario.



Red pine planted on Whitefish Reserve, Ontario.

programs for entire regions.

In most areas additional timber or cutting rights are also available in the forest surrounding the reserves. This potential could, and in many instances must, be exploited to enable Indian people to develop viable operations. Primary and secondary manufacturing industries have become feasible, too, with the information provided by the surveys.

The survey inventories and management plans, along with the more accurate data now available from the timber returns, make possible a rational policy on the quality and area of timber to be cut, in order to carry out profitable operations without exhausting the resource. Indian bands can obtain expert advice from Indian Affairs

foresters.

Many band councils, however, have shown some resistance to starting new enterprises as suggested in the management plans. This is partly because they suspect that they cannot compete with the existing forest industry. Also, certain forest operations have not proved effective and viable because the bands lacked business expertise.

Some of the more successful enterprises are naturally those that enable Indian people to work to their own rules. In such cases, a company estimates its wood requirements from a given area, then makes contracts with various Indian bands according to the volume they can, or choose to, produce, until the requirement is made up.

Economic Development

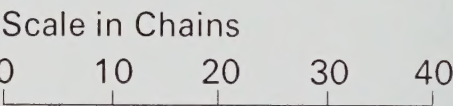
Many Indian bands have formed Economic Development Committees from among their own members. Their purpose is mainly to investigate business opportunities and assist with the difficult economic choices that band councils have to make.

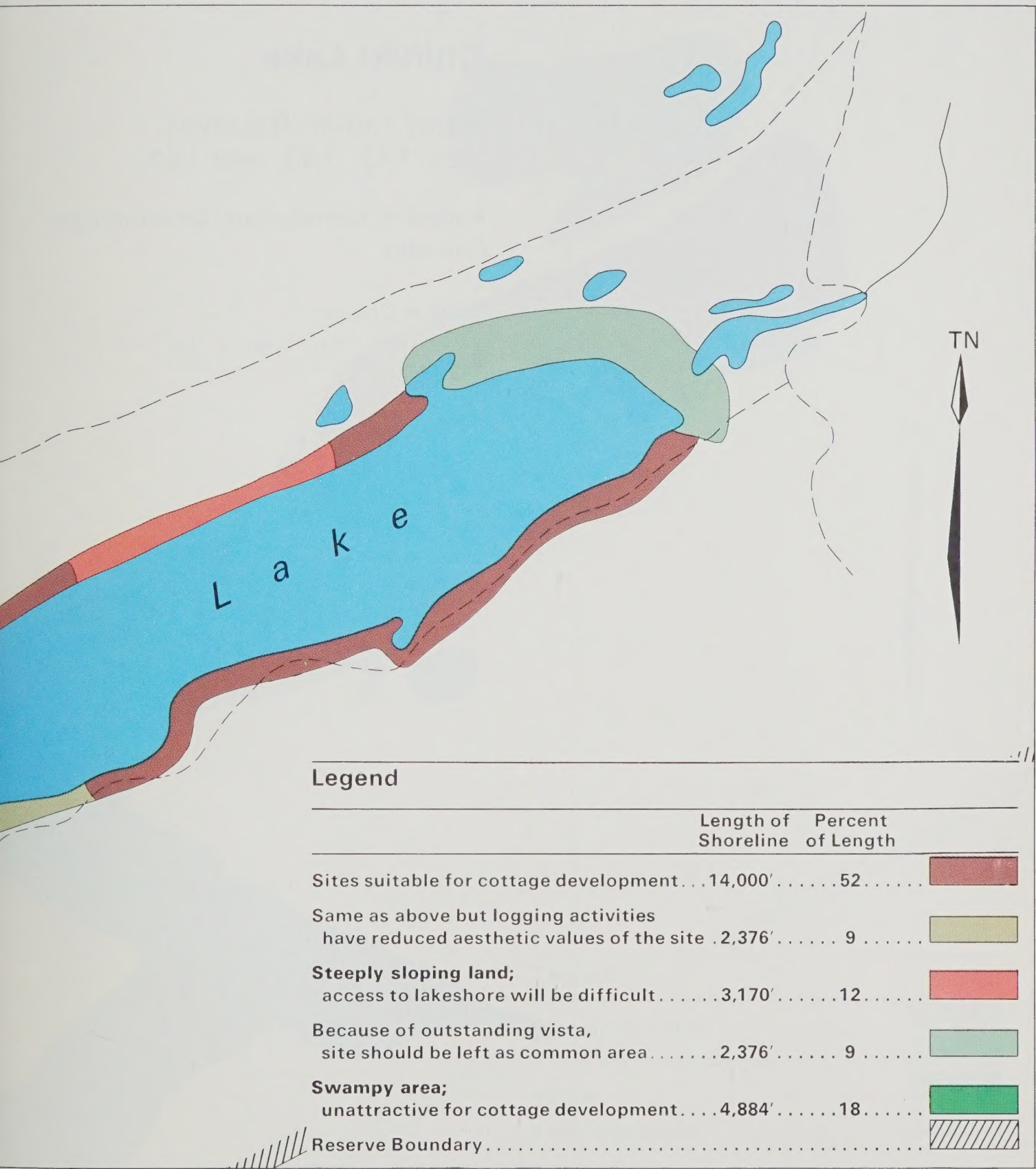
If development involves forest resources, these committees can call upon regional foresters to advise them, to interpret data from forest surveys, or to cruise and appraise the timber. The band may then decide, for example, to sell the cutting rights, take out the timber themselves or leave it alone. On the other hand, they may consider whether it would be more worthwhile to develop a forest-based industry or a recreation area, to reforest a site or use it for a different purpose, such as agriculture.

Chiniki Lake

Stony Indian Reserves
Nos. 142, 143, and 144.

Site Classification for Cottage
Development

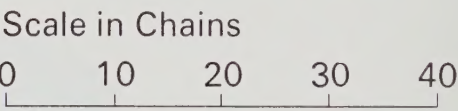


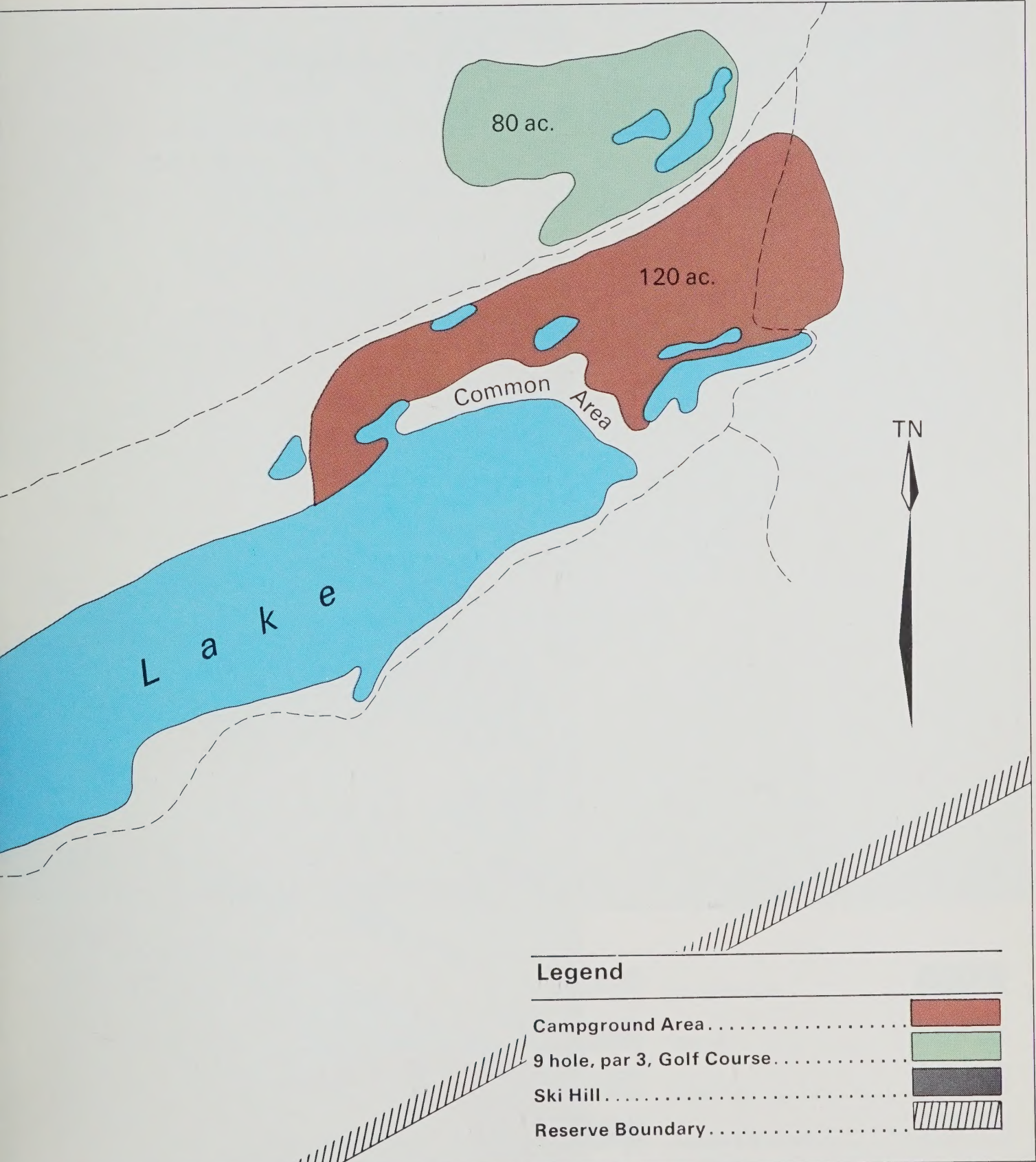


Chiniki Lake

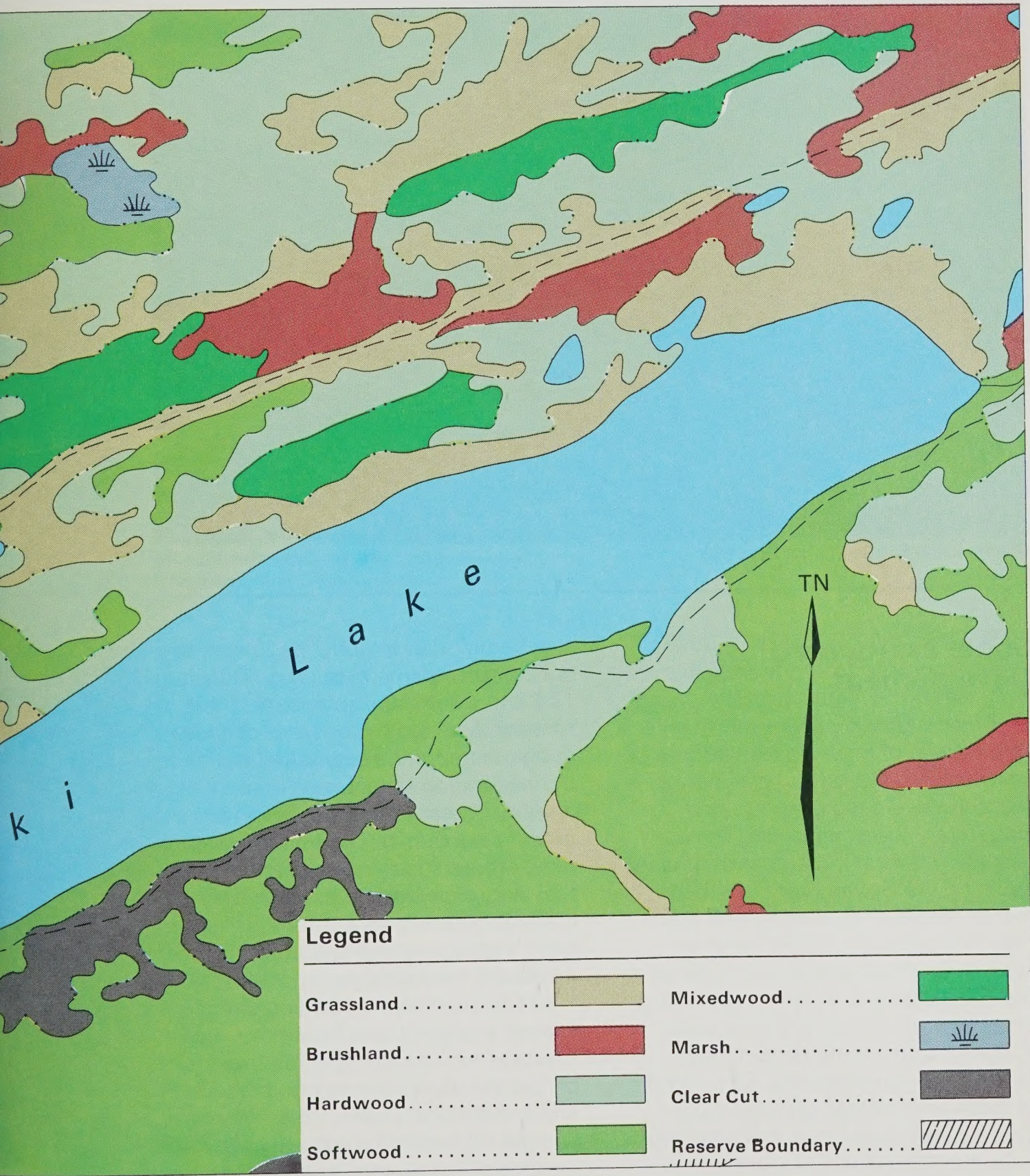
Stony Indian Reserves
Nos. 142, 143, and 144.

Potential Recreational Development
Complex











Chiniki Lake, Stoney Indian Reserves,
Alberta.

Some Examples of Development

At the town of Slave Lake in Northern Alberta, a four-way partnership has developed an integrated industry for forest products. The partners are the local Indian bands, private industry, the Government of Alberta, Indian Affairs and other federal agencies. The project is based on large-scale timber harvesting in the Lesser Slave Lake area to supply a sawmill, a plant to manufacture prefabricated buildings and a panel-board plant. The Indians have become part-owners of these enterprises, and they fully own a new motor hotel at Slave Lake.

On the Whitefish Lake Reserve in

Northern Ontario, timber had been cut by outside interests since about 1880. In the 1950's an Indian Affairs forester, assisted by the head of a local lumber company, encouraged the Indian band to organize its own forestry operation to both cut and process the timber. The lumber company agreed to take whatever volume they could produce, whenever they could produce it. As a result, the band's income and employment increased considerably.

At Christian Island, Ontario, the reserve's sawmill was losing money. This was in the early 1960's when barbecues were coming into fashion, and two foresters from Indian Affairs and the Canadian Forestry Service had the idea of helping the band to develop

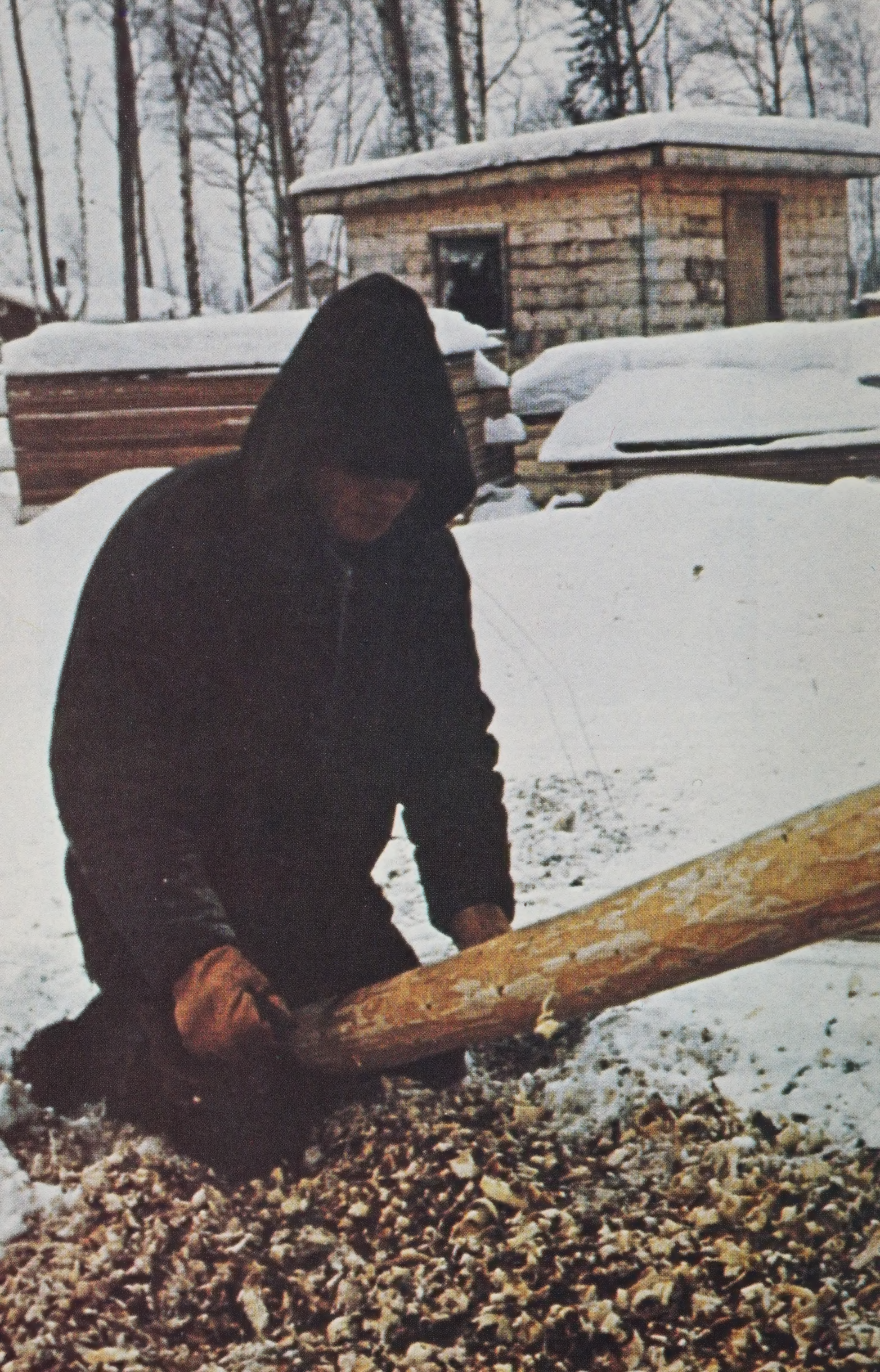


Mixed hardwoods for charcoal production in Christian Island Reserve kilns.

a charcoal operation for the barbecue market. They studied charcoal-making elsewhere, the plant was set up, and the band was able to employ its members both as loggers and plant workers.

In 1963, a forestry training school was to be established in the Chilcotin country of the British Columbia interior. The forester in charge designed the buildings and trained the Indian people to build the school. Realizing that the success of the project depended on themselves alone, the Indian people developed a pride in their work and acquired skills that enabled them to continue with part of the construction unaided. They now use the training school as an Indian cultural centre. In a similar way, when encouraged to take part in a logging

operation, the Indian people were able to increase their monthly output by almost tenfold within the first year and have since taken over the entire logging operation.



Financial Services

The main federal instrument for financing Indian forest enterprises is the Indian Economic Development Fund. It was established by Indian Affairs in 1970, with \$50 million, to assist in developing forestry and other types of businesses on or off the reserves. It also assists non-Indian business organizations that work with Indians, as in the Slave Lake development.

In its first four years, the Fund has been used to help finance more than 50 Indian forestry operations with some \$3 million in direct loans, \$628,000 in grants, and guarantees worth nearly \$6 million for loans from other sources.

Through the Fund, payment is made for management advisory services provided by the Department of Indian and Northern Affairs, the Canadian Executive Services Overseas and the Indian Business Assistance Program of the University of Western Ontario.

Other financial assistance is available from the Department of Regional Economic Expansion for capital expenditures and managerial services; from the Department of Manpower and Immigration for training courses; and from provincial governments for tree planting, forest fire-fighting, and forestry training courses and workshops. The banks, forest product brokers and credit agencies are among the private institutions that offer financial support, often with government guarantees.

Advisory Services

The Indian Affairs Branch provides for some outside technical advice on management through the Indian Economic Development Fund but it also has eight foresters on staff. These include a forestry specialist in Ottawa, three foresters in British Columbia, and one each in Alberta, Manitoba and Ontario. The eighth, in Quebec, is an Indian graduate of Laval University.

The Canadian Forestry Service, though not engaged in the day-to-day matters, provides consultants for special needs, as in the case of contaminated trees on the Whitefish Lake Reserve, which is discussed later in this section.

Provincial forestry agencies offer advisory services for all forest enterprises, but with Indian reserves they have been particularly helpful in the reforestation, wildlife and fire protection fields.

Forest Protection

An important aspect of conserving the resource on Indian forest lands is forest fire protection and suppression. Protection includes the detection of fires by means of air patrols and fire towers, and prevention measures, such as closing forest areas to the public at times of high hazard or issuing warnings on radio programs. Suppression is the term used for fire fighting.

Since fire protection and suppression in forested areas are provincial responsibilities, the Minister of Indian and

Northern Affairs signs a separate agreement with each province for the reserves that ask for this coverage. In Quebec, agreements are made with the Forest Fire Protection Associations in areas where they operate. Each agreement is primarily a financial commitment to pay the province or association a fixed sum annually for fire protection and suppression. The payment is usually based on a rate per acre adjusted periodically as costs and acreages vary. The Department is currently spending about \$300,000 annually on this program.

The provinces bear part of the costs, and also train and employ Indians for fire fighting in northern areas. In some provinces, they have been employed as suppression crews, standing by in periods of high fire hazard. In Saskatchewan they have served as "smoke-jumpers"; these are trained crews dropped by parachute to fight forest fires. Indian people have also manned the towers used for spotting outbreaks of fire.

A different kind of forest protection—chemical control of insects—is usually carried out in conjunction with provincial programs, and is available to Indian bands. The Indian Affairs Branch was instrumental in having 300 acres sprayed in the Maritimes, and in providing \$10,000 in 1972-74 to assist Quebec in controlling spruce budworm infestations on reserves in the western part of the province.

Protection of Indian Rights

A major trust responsibility of the foresters in the Indian Affairs Branch is to help in protecting the timber rights of Indian bands. The reserve's resources do not belong to any individual, but to the whole band, and Indians generally look upon this service as an important safeguard. Monitoring and inspection by foresters ensures that the management of reserve forest lands is being properly carried out. Foresters also provide technical advice and interpret policy as set by forestry regulations.

The foresters have played a role, too, in obtaining fair contracts and better prices for Indian timber and sawlogs from operations both on and off the reserves. This service has helped to bring about significant benefits for Indians since the survey program began some 25 years ago. For example, the revenues of many Indian bands have increased substantially, enabling them to meet needed capital expenditures, such as those for housing, which may have been beyond their reach in former times.

Much of the credit for carrying out the foresters' recommendations must go to the District Superintendents and field staff of Indian Affairs, who have provided the cooperation, liaison and administration that individual projects need. For instance, in one year alone, Ontario had active forestry operations on 60 reserves, which would have been far beyond the scope of the small forestry staff without this aid.

Another form of protection, not uncommon, is best shown through a recent example. The Whitefish Lake Reserve in the Sudbury area of Ontario had suffered heavy sulphur dioxide damage to some of its valuable stands of trees. Fumes from Sudbury smokestacks were suspected of being the source of this pollution. Indian Affairs, after calling upon the Forest Management Institute to investigate the damage, concluded that there were grounds for legal action. The Department of Justice accordingly assembled the data and presented the case for the Crown on behalf of the Indian band against two smelting companies in the area. The latter eventually settled out of court with a substantial award and legal costs to the Whitefish Lake Indian band. The amount was close to the original damage estimate of the Forest Management Institute.

This example illustrates a trust responsibility of Indian Affairs and the extent of the cooperation by other federal agencies in fulfilling it.



Conclusion

The surveys and reports of 1948-70 were intended to provide a basis for intelligent planning of forest management on Indian reserves. With this inventory base, Indian bands and their advisors now have accurate information when important decisions have to be made on enterprises selected by the Indians.

Despite problems, several new Indian forest enterprises have emerged in the past 25 years, and particularly in Ontario, Alberta and British Columbia—the provinces with nearly 70% of Indian forest lands. Two conclusions may be drawn from such developments in recent years. The first is that benefits have accrued to Indian bands wherever they have adopted management proposals arising from the forest surveys. The second, and equally important one, is that success has been achieved on those reserves where the chiefs or other band members have provided resourceful and energetic leadership for their people.



Appendix

Published Reports

**(1) Indian Reserve Forest Survey
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